F·A·A·M facility for airborne atmospheric measurements

FLIGHT FOLDER

Flight No.:	B273
Date:	01 March 2007
Take Off	08:54:43Z
Landing:	13:56:39Z
Flight Time	5h01m56

Campaign: GFDEX – Lee Cyclogenesis / Barrier Wind

Operating Area: Denmark Strait

POB	Position	Name	Institute
1	Captain	Alan Roberts	Directflight
2	Co-pilot	Steve Ball	FAAM
3	CCM	Dawn Quinn	Directflight
4	Mission Scientist 1	G. Nina Petersen	University of East Anglia
5	Flight Manager	Mo Smith	FAAM
6	Cloud Physics	Kate Turnbull	FAAM
7	AVAPS / CCM2	Stuart Heath	FAAM
8	Mission Scientist 2	Jon Egill Kristjansson	University of Oslo
9	Mission Scientist 3	Emma Irvine	University of Reading
10	Mission Scientist 4	Shunli Zhang	University of Toronto
11	Mission Scientist 5	Stephen Outten	University of East Anglia
12	Mission Scientist 6	Ivan Fore	University of Oslo
13			
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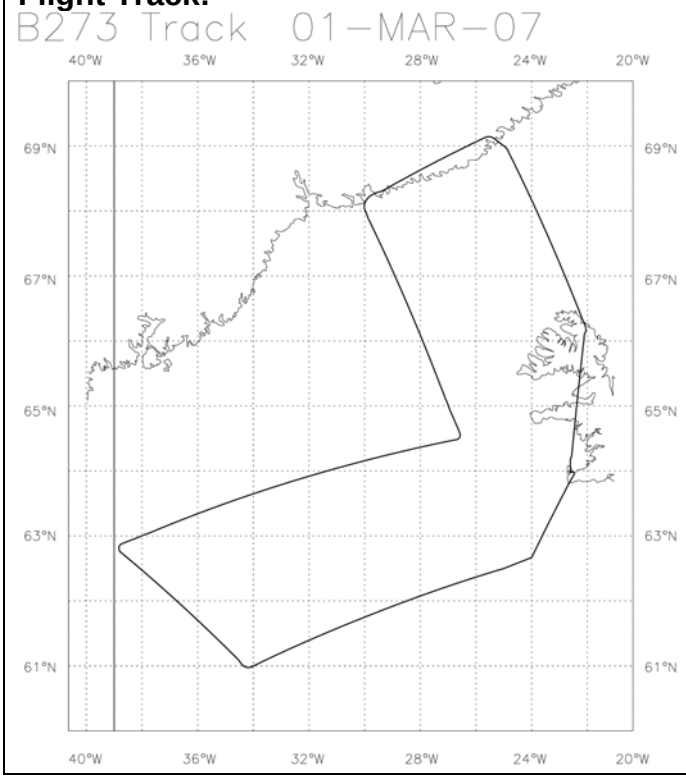
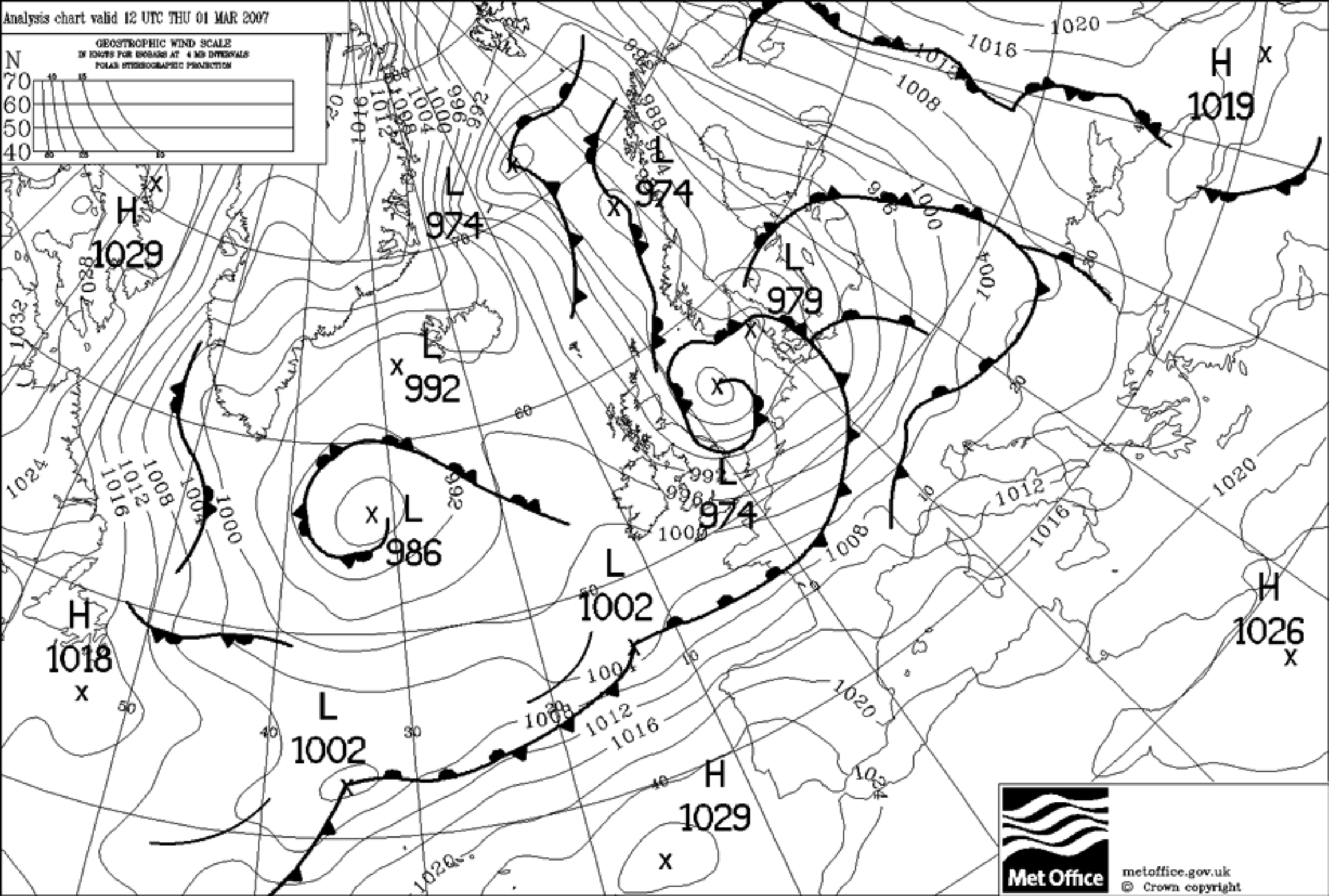
Flight Track:



FLIGHT SUMMARY

Flight No b273
Date: 01 Mar 2007
Project: GFDEX - Barrier wind / Mesoscale cyclone
Location: Denmark Strait

Start Time	End Time	Event	Height (s)	Hdg	Comments
075846		Start-Up	0.63 kft	234	63'59.66N, 22'37.65W
082401		INU	0.64 kft	234	To Navigate
085443		T/O	1.3 kft	092	Keflavik
085953		ASPs	10.5 kft	210	Open
090555		Videos	20.5 kft	212	Start FFC & RFC
091059		Videos	24.0 kft	211	FFC & DFC
091751	094853	Run 1.1	24.0 kft	248	
092056		Sonde	24.0 kft	248	Launch #01
094803		Sonde	24.0 kft	249	Launch #02,problems
094853	095107	Profile 1	24.0 - 26.0 kft	250	
095107	101356	Run 2.1	26.0 kft	249	
101356		Sonde	26.0 kft	246	Launch #03,problems
101732		Sonde	26.0 kft	314	Launch #04,problems
104904		Videos	26.0 kft	069	Change Tapes
105036	113319	Run 2.2	26.0 - 26.1 kft	070	
105221		Sonde	26.0 kft	068	Launch #05, Good
105233		Event	26.0 kft	068	Contrailing
110626		Sonde	26.0 kft	070	Launch #06
112003		Sonde	26.0 kft	073	Launch #07
113320	113458	Profile 2	26.1 - 27.0 kft	075	
113401		Sonde	26.5 kft	076	Launch #08
113458	114617	Run 3.1	27.0 kft	076	
114818	115715	Run 3.2	27.0 kft	328	
115257		Sonde	27.0 kft	330	Launch #09
115715	115842	Profile 3	27.0 - 28.0 kft	328	
115852	123114	Run 4.1	28.1 - 28.0 kft	328	
120250		Sonde	28.0 kft	326	Launch #10
121217		Sonde	28.0 kft	325	Launch #11
121954		Videos	28.0 kft	327	Change Tapes
122144		Sonde	28.0 kft	326	Launch #12
123114		Sonde	28.0 kft	327	Launch #13
123529	124400	Run 4.2	28.0 kft	060	
124400	124531	Profile 4	28.0 - 29.0 kft	052	
124946	124957	Run 5.1	29.0 kft	055	
125108	132502	Run 5.2	29.0 kft	140	
125238		Sonde	29.0 kft	140	Launch #14
130050		Sonde	29.0 kft	170	Launch #15
130841		Sonde	29.0 kft	171	Launch #16
131651		Sonde	29.0 kft	174	Launch #17
132503		Sonde	29.0 kft	173	Launch #18
134416		ASPs	10.2 kft	189	Closed
135639		Land	0.70 kft	153	Keflavik
140134		Shutdown	0.69 kft	268	63'58.45N, 22'35.76W


Analysis chart valid 12 UTC THU 01 MAR 2007
GEOSTROPHIC WIND SCALE
IN KNOTS FOR 850MB AT 4 MB INTERVALS
POLAR STEREOGRAPHIC PROJECTION
N
70
60
50
40
H
1029
L
974
L
992
L
986
L
974
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979
H
1019
L
974
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1002
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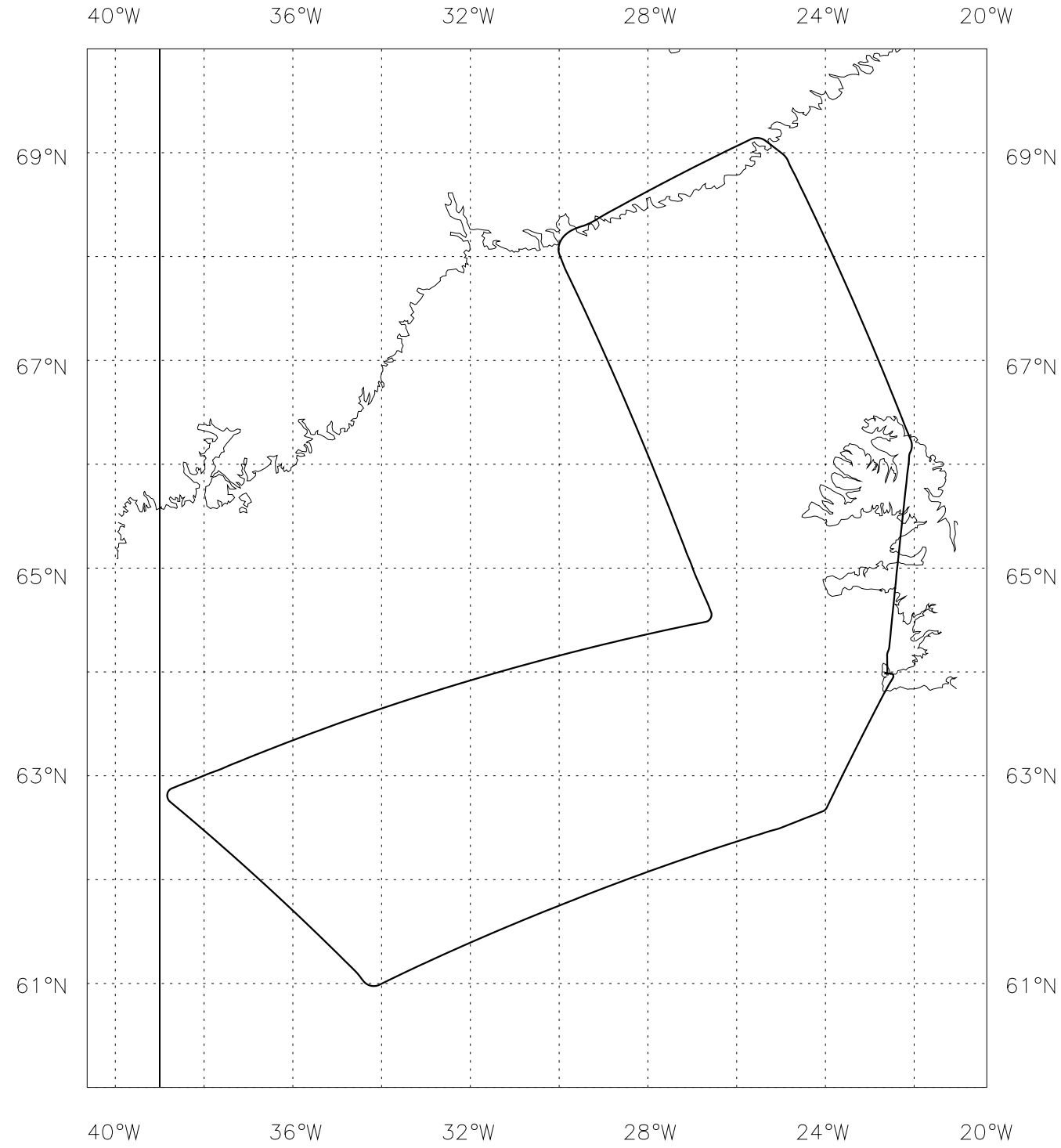
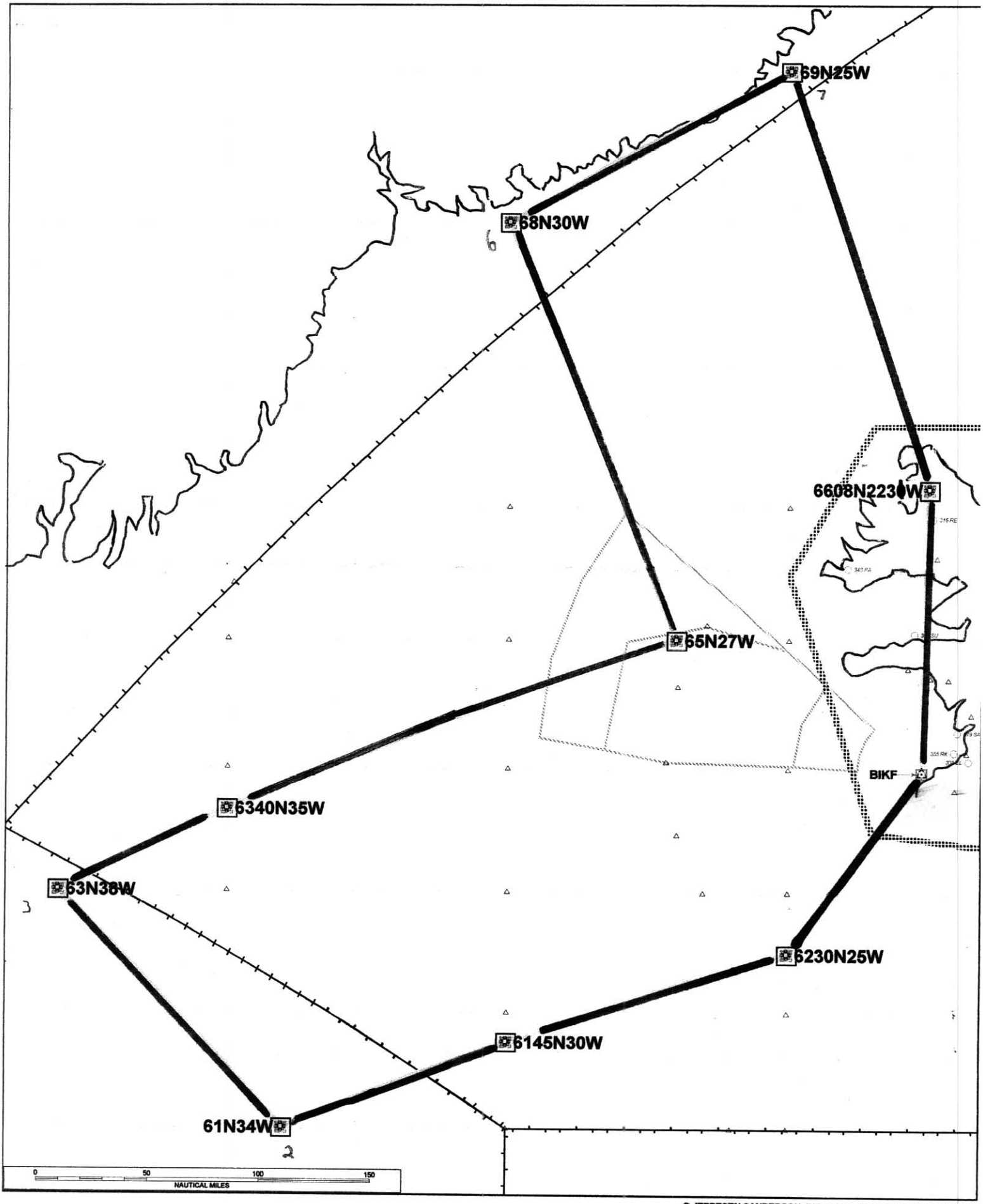
B273 Track 01-MAR-07



BIKF -> BIAR - Overview
NavData Cycle 2007-2 Expires: Thursday, 15 March 2007.
Scale: 1:3991666 (1 inch = 54.75 naut mi). Printed on 28 Feb 2007

JEPPESEN
FliteStar 9.170



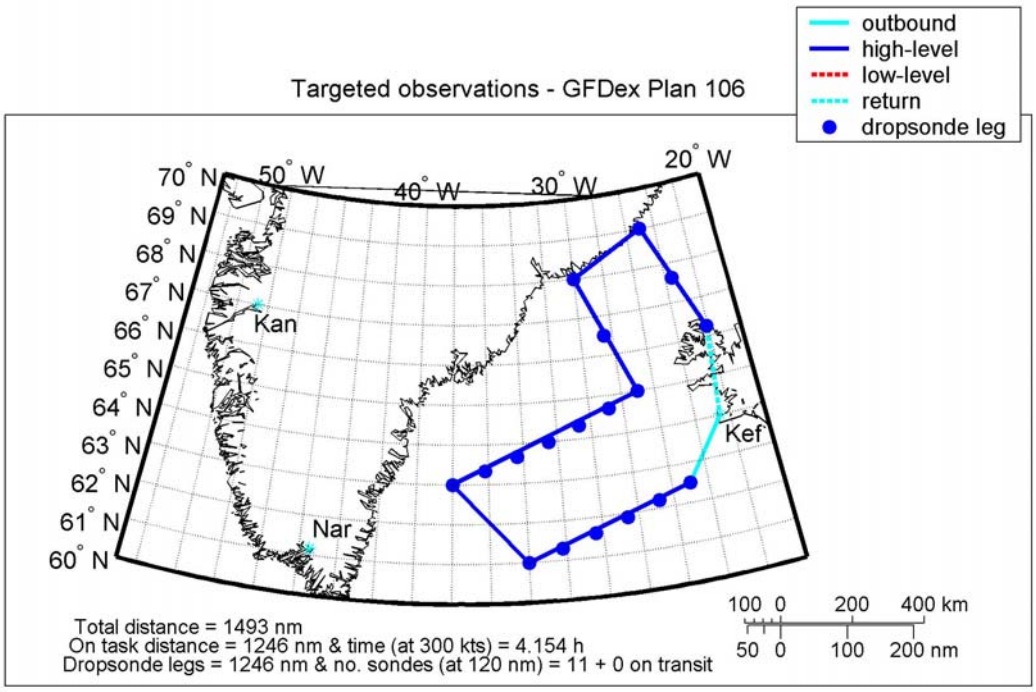
GFDex Sortie Brief – B273 – 1 March 2007
Lee cyclogenesis, Barrier Wind North and Targeted Observations of SAP (plan 106)

Mission Scientists: Nina, Jon Egill Kristjansson, Emma Irvine, Shunli Zhang, Stephen Outten ,Ivan Fore

Aims

- Dropsonde observations of Lee Cyclogenesis and a barrier wind in northern Denmark Strait
- These will also be targeted observations of a sensitive area prediction SW of Iceland
- Verification areas: Scandinavia (optimisation 24-48 hours, VT 12z 2 to 12z 3 March)
- And NW Europe (opt. 48 hrs, VT 12z 3 March)
- Missions can be flown at **most efficient speed**

GFD104	Time	Manoeuvre	Distance (nm)	Duration (min)	Total time (min)
1	0900	Take off Keflavík , transit to 62.5N, 25W.	112	~40	~40
2		Straight level run at 25-30 kft from 62.5N, 25W to 61N, 34W. All legs at most efficient speed **5 Dropsonde releases evenly spaced (~68 nm)**	271	~55	~95
3		High-level leg to 63N, 38W	164	~33	~128
4		Straight level run at 25-30 kft from 63N, 38W to ~65N, 27W. **4 Dropsonde releases evenly spaced (~78 nm), then turn onto heading 338 deg**	313	~63	~191
5		Straight level run at 25-30 kft from 65N, 27W to 68N, 30W. **5 Dropsonde releases evenly spaced (~48 nm)**	193	~40	~231
6		Turn and high-level leg to 69N, 25W	125	~25	~256
7		Straight level run at 25-30 kft from 69N, 25W to 66.25N, 22.1W. **5 Dropsonde releases evenly spaced (~44 nm)**	177	~35	~291
8		Transit to Keflavik	134	~27	~318



Mission Scientists Debriefing Sheet

Flight No.B273

Date: 01.03.2007

Sortie Objectives: Make dropsonde measurements of lee cyclone genesis west-southwest of Iceland and of barrier winds in northern Denmark Strait. Make targeted observations

Summary of weather conditions: Model forecasts showing 1-2 closed circulations in low level wind and sea level pressure. Perhaps possible to detect the cyclones on a satellite image from 0503Z. In Denmark Strait there is stable northeasterly wind of about 15-20kt . Mainly low level cloud layer in the region but quite clear conditions north of 66°25N.

Flight pattern: Transit from Keflavik to 62°30N 25°W. Dropsonde leg to the south of the cyclone(s), dropping 3 dropsondes until 61°N 25°W. Dropsonde 2 only had data below 850hPa and dropsonde 3 failed. Another sonde was launched as this was a targeting sonde. The sondes all showed light variable winds at low levels, 10kt or less at 925hPa. Straight level leg to 63°N 38°W and then a straight level run dropping sondes to the north of the cyclone(s). The first 2 sondes (DS 5&6) showed northeasterlies at low levels 10-20kt, in agreement with the hypothesis of the leg being to the north of a cyclone. The next two dropsondes showed light variable winds with the last dropsonde of the leg, DS9, measuring east-southeasterly 25kt, indicating that there might be another cyclone centre. The first barrier flow leg was from 65°N 27°W to 68°N 30°W. Low level winds (925hPa, 4 dropsondes) were northeasterly 15-25kt. the second barrier flow leg from 69°N 25°W to 66°15N 22°05W with 5 dropsondes similarly gave northeasterly 15-25kt at 925hPa. Transit back.

Assessment of the Flight: When the dropsonde problem had been dealt with the flight went as planned. The analysing of the first two dropsonde legs and model runs will be interesting in the sense of the possible finding of two cyclone centres. Not all models had forecasted that. The last two legs very much measured what was expected.

Problems: Three dropsondes failed having a launch line. Stuart Heath thinks he should be able to retrieve the data from them all the same, post flight. After this failure and for the rest of the field campaign Stuart unpacked and repacked all dropsondes before launches and that seemed to do the trick.

Guðrún Nína Petersen

Mission Scientist's Log

Flight No B273 Date 01.03.07 Name GNP Page 1 of 2

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
08.94					Take off 030 3kt BIKF
					Climbing to 24kft. cloud tops 7000ft?
					Cameras front + ~~back~~ downwards.
					Stratified tops, some icing in the top as well as cum. penetr. through.
09.15					more conv. to right? west.
					35kt ~~230~~ ~7NM dstt of sonde
09.20.52					DS1 (Clear skies underneath) OK Sonde
					Stratif. clouds br. up slightly
09.48.03	R1	24kft.			DS2 280 40kt ~7NM dstt
09.48.53	P1				Climbing to 26kft (only data from ↓)
09.51.07	R2.1	26kft.			wnd at 26kft = 359°T 3m/s
10.13.56					DS3 320° broken clds below south, high cirrus to the left about ar level (70's sonde)
	~~R3~~				
10.17					DS4 same prof. cloud streets, to left (south)
10.5??					DS5 OK!
11.0626					DS6 63.30N 34.40W roughly OK
11.20					DS7 OK.
11.349			64.13		DS8 320 60kt 9NM dstt
11.33	~~R4~~	27kft			climbing

Mission Scientist's Log

Flight No B273.. Date 01.03.07 Name GNR Page 2 of 2

GMT	Run / Profile	Height	Hdg	GPS Position	Remarks (clouds, weather, visibility, winds, sea state etc.)
11.52	3.2			65N 27W	DS9 350 290kt 15NM ok (OK)
11.57.50	P3				climb to 28kt.
11.59	R				
12.03		28kft.	350	65N	DS10 260 300kt 18NM ok. (OK)
12.12 17					DS11 260 320 20NM ok (OK)
12.21 44					DS12 260 300 19NM ok.
12.31 14		28kft.	350		DS13 280 120
12 52		29kft.			DS14
12 56					Ozon 205 ppb
13 00.50			190		DS15 310 300kt
13.08 41		29kft.			DS16 328kt
13.16 57		29kft.	171		DS17 322kt.
13.24		29kft.			DS18 2
13 57					LANDING

CLOUD PHYSICS LOG

Flight No. B273 **Date: 01/03/07** **Operator: KFT** **Page 1 of 1**

G.M.T.	PCASP		FSSP	SID1	2D2-C			2D2-P			Remarks
DRS Time	Conc/cc	Mean R	Block Transfer	Particle Count	Conc/L	Max Size	Habit	Conc/m3	Max Size	Habit	
Taxi			Signal base incr								
T/O											Heaters on
09:13			Base values incr								FL240
09:16											Data rate cut to 1Hz
09:20:53	75	0.06	4	-	0	0		0	0		Sonde 1 FL240
09:40											CIP recording restarted - hung
09:48:05	82	0.06	5	-	0	0		0	0		Sonde 2 FL240 – 2DP noisy
09:49:55	48	0.06	5	-	0	0		0	0		FL250
09:51:03	70	0.05	5	-	0	0		0	0		FL260 End Profile 1
10:06											CIP recording restarted
10:13:50	213	0.06	5	-	0	0		0	0		Sonde 3, end run2 2DP NOISY
10:31			Base values incr								
10:39:00	343	0.06	6	-	50	200	8	0	0		First pictures on 2DC
10:45:20	370	0.06	7	-	100	200	8,4	7	7		
10:52:23	322	0.06	7	-	0	0		0	0		Sonde 4
11:00:00	282	-.06	8	-	142	325	8,4,9	0	0		
11:05:00	295	0.06	21	-	110	300	9,4,11	0	0		2DP NOISY
11:06:30	281	0.06	22	-	91	275	9,4,11	0	0		Sonde 6
11:09:00	300	0.06	23	-	2.5	100	11,8	0	0		2DP NOISY
11:15:00	282	0.06	25	-	10	100	11,8	0	0		2DP NOISY
11:20:00	266	0.06	25	-	0	0		0	0		Sonde 7; 2DP NOISY
11:25:00	260	0.06	26	-	2.5	200	11,8	0	0		2DP NOISY
11:30:00	236	0.06	26	-	0	0		0	0		2DP NOISY
11:34:05	210	0.06	26	-	0	0		0	0		Sonde 8 (FL265
11:35:00	195	0.06	26	-	2.5	100	11	0	0		FL270 start run 3.1
11:40:00	230	0.06	26	-	0	0		0	0		PCASP Vref dropouts started
11:48:18	220	0.06	26	-	0	0		0	0		Start run 3.2
11:53:00	216	0.06	26	-	0	0	11	0	0		Sonde 9
11:57:15	233	0.06	27	-	0	0		0	0		Start profile from FL270
11:58:44	228	0.06	27	-	0	0		0	0		FL280 2DC, 2DP NOISY
12:02:50	188	0.06	27	-	0	0		0	0		Sonde 10 FL280, 2DP NOISY
12:12:20	167	0.06	27	-	0	0		0	0		Sonde 11, 2DP NOISY
12:21:45	180	0.06	27	-	0	0		0	0		Sonde 12, 2DP NOISY
12:31:17	166	0.06	27	-	0	0		0	0		Sonde 13, 2DP NOISY

CLOUD PHYSICS LOG

Flight No. B273 **Date: 01/03/07** **Operator: KFT**

G.M.T.	PCASP		FSSP	SID1	2D2-C			2D2-P			Remarks
DRS Time	Conc/cc	Mean R	Block Transfer	Particle Count	Conc/L	Max Size	Habit	Conc/m3	Max Size	Habit	
12:44:12	186	0.07	28 Base incr'd	-	0	0		0	0		NOISE on 2DP, 2DC, FL280
12:45:33	164	0.07	28	-	0	0		0	0		FL290 2DP, 2DC NOISY
12:51:08	145	0.07	28	-	0	0		0	0		Start run at FL290
12:52:40	151	0.06	28	-	0	0		0	0		Sonde 14, 2DP NOISY
13:00:50	136	0.06	28	-	0	0		0	0		Sonde 15, 2DP NOISY
13:08:43	161	0.07	28	-	0	0		0	0		Sonde 16, 2DP NOISY
13:16:54	130	0.06	29	-	0	0		0	0		Sonde17, 2DP NOISY
13:25:04	128	0.08	29	-	0	0		0	0		Sonde 18, 2DP NOISY
											END SCIENCE

Revision date: 15/03/2007 2:08 PM

CLOUD PHYSICS PROCESSING LOG

Flight number: **B273** **T/O:** 08:54:43
Date of flight: 01/03/07 **Land:** 13:56:39

A) FFSSP PROCESSING To Exeter		
Processing Stage	Done?	Comments
1) Transfer *.txt files from DVD to processing PC		
Bnnn_FFSSP_hh.txt for each hour of data Bnnn_FFSSP_HVMS.txt		**hh =** **Last sec processed =**
2) FTP the files (ascii) from the PC to directory PMSDATA: on FLOODS		**File size =**
3) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FSSP_EXTRACT_TAS** a) Flight number: **Bnnn** b) Path name: **MFDDATA:Bnnn_MFDX** c) Output directory: **PMSDATA:** d) Start time: *0 if unknown (see comment box)* e) End time: *240000 if unknown*		Use time just before/after take-off/landing. If T/O /landing just after/before the hour, ensure start/end time is before/after the hour if there is an FFSSP_hh.txt file for that hour.
4) FLOODS> **RUN MRFB:[PMS.FAST_FSSP]FFSSP_PROCESS_TXT** a) Flight number: **Bnnn** b) Directory: **PMSDATA:** c) TAS in processing: **Y** d) Vel threshold (clicks) **0** e) Calibration file: *Use the most recent calibration file.* Format FFSSP_CALddmmyyyy.txt Calibration files to be stored in MRFB:[PMS.FAST_FSSP] f) Adjust FFSSP time **Y/N** g) If Y, enter value to add to data time (seconds)		**Total glitches =** **Sec file written ok?** **Note calibration file used** Yes only if gross errors occur in FFSSP time eg; ~ 1hour
5) FLOODS> **WAVE** a) WAVE> **write_procffssp_to_m5,'pmsdata:Bnnn_procffssp.dat', 'mfddata:Bnnn_mfdX','pmsdata:Bnnn_m5procffssp',/auto** b) WAVE> **exit**		Use PVWAVE for this section **Note time correction applied to FFSSP by /auto =**
6) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5procffssp** b) Dataset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY (y=x+1)** d) Parameter description file: *leave blank to use default*		**Input file size =** **M5 output file size =**
7) CHECKS: i). Are FFSSP and JW/Nevzorov LWC synchronized in time? *In flight_plot, parameters* *JW LWC para 535* *Nevzorov LWC para 602* *FFSSP LWC para 1202* ii). If not, repeat from step 5b replacing /auto with **addt=x** which adds x+20 secs to FFSSP time.		**Synchronized?**

CLOUD PHYSICS PROCESSING LOG

Flight number: **B273**
Date of Flight: 01/03/07

B) 2D PROCESSING		REPROCESS +1hr
Processing Stage	Done?	Comments
1) Transfer Bnnn.dat file from CD/DVD to PC	Y	
2) Zip up file on PC (Bnnn.zip)	Y	
3) FTP the zipped file (binary) from the PC to the directory SEADAS_DATA:[SEADAS_DATA] on FLOODS	Y	17704 blocks
4) Log on to FLOODS		
5) Unzip SEADAS_DATA:[SEADAS_DATA]Bnnn.zip	Y	**Size of Bnnn.dat = 334855**
6) FLOODS> **WAVE**	Y	Use PVWAVE for this section
WAVE> **CONVERT_SEADAS_FILE** a) Input file: **SEADAS_DATA:[SEADAS_DATA]Bnnn.dat** b) Output file: **SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat** WAVE> **exit**		**Blocks read = 63283** **Blocks written = 63283** **Bad reads = 0**
7) FLOODS> **RUN MRFB:[PMS.SEADAS]READM200_FILE**	Y	
a) Default directory: **PMSDATA:** b) Flight number: **Bnnn** c) Disk file name: **SEADAS_DATA:[SEADAS_DATA]Bnnn_seadas.dat** d) Comment string: e) Start time: *0 if unknown (T/O – 5 min)* f) End time: *240000 if unknown (Land + 5 min)* g) Read 2DC: **Y** h) Read 2DP: **Y** i) Secondary data: **Y** j) FSP-SYNC: **Y** k) cmd.str: **Y** l) Auto time correction: **N** m) Full length secondary:**N**		**Start = 085000** **End = 140000** Ignore error message scroll (vestigial error from tapes) **Are FRW, FSP, IMB, PCA,SEC files in PMSDATA? Are they non-zero in size?**
8) FLOODS> **WAVE**		2D image display and printing
i). WAVE> **imagedisplay** a) 2D directory name: **PMSDATA:** b) Flight number: **Bnnn** c) File generation no: **0** d) Time from IWC plot: **N** e) Select probe: (**1**) 2DC (**2**) 2DP f) Start time: *As in 7e above* g) End time: *As in 7f above* h) Time interval (sec): **5** recommended (0 for all images) ii). WAVE> **auto_image** a) 2D directory name: **PMSDATA:** b) Flight number: **Bnnn** c) Enter date: **YYYYMMDD** d) Enter start time: *0 if unknown (T/O – 1 min)* e) Enter end time: *240000 if unknown (Land – 1 min)* f) Enter time interval (sec) between successive imaged blocks: **10** iii). WAVE> **exit** to create files iv). FTP ascii *.PS files from PMSDATA: to PC v). Load each into Ghostview or other pdf-converter vi). Output as pdf file (720 dpi resolution), appending name prefix of **CORE-CLOUD-PHY**_ to converted files		Must be done from FLOODS itself. **Note any problems with images** No 2DC images until 103935 Only Noise on 2DP throughout flight. Prepare imagery for Core data From own PC again **Start = 103000** **End = 135500** 10pp 2DC, No 2DP FAAM_YYYYMMDD_R0_ Bnnn_2Dx-images.ps Notes on this in instructions

9) FLOODS> **RUN MRFB:[PMS.SPEC2D.AUTO]PROCESS2D_AUTO** a) Flight number: **Bnnn** b) Directory: **PMSDATA:** c) File generation: *Hit enter* d) Time correction: *Time offset of the 2D data* e) TAS: **Y** f) MFD directory: **MFDDATA:Bnnn_MFDX** g) Probe number: (**1**) 2DC (**2**) 2DP (**0**) Both *0 unless either probe known to be faulty* h) Start time: *0 if unknown (T/O + 30sec)* i) End time: *240000 if unknown (Land – 30sec)* j) Nominal averaging: **0.2** seconds for conversion to M5 k) Particle type 2DC: **8** if known to be in ice cloud **11** if known to be in water cloud l) Particle type 2DP: **8** if known to be in mixed-phase **8** if unknown m) Coefficient choice: **2** n) Output root filename: **PMSDATA:Bnnn_PROC2D**	Y	NB. an error message may appear, floating point exception, rerun and use time quoted in error message, repeat until successful. **X = A** **Start = 085500** **End =** 135500 **Time data processed to =** 135225 **2dproc files present? Y** *.2dc, *.2dp and *.dat
10) FLOODS> **WAVE** i) WAVE> **WRITE_PROC2D_TO_M5, 'PMSDATA:BNNN_PROC2D.DAT', 'PMSDATA:BNNN_M5PROC2D'** ii). **exit**	Y	Use PVWAVE for this section Error message about HDDR file should be ignored. **Records = 2674, 178**
11) FLOODS> **MODIFY** a) Modifying datasets: **pmsdata:Bnnn_m5proc2D** b) Datset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY** d) Parameter description file: leave blank to use default	**Y**	**X =** **Y = (X+1)**
12) CHECKS: Are 2DC/2DP IWC of comparable magnitude and well-correlated with Nevzorov TWC? *In flight_plot, parameters* *Nevzerov TWC para 605* *2DC IWC para 1302* *2DP IWC para 1312*	Y	**Correlated? Y**

CLOUD PHYSICS PROCESSING LOG

Flight number: **B273**
Date of Flight: 01/03/07

C) PCASP PROCESSING		
Processing Stage	Done?	Comments
1) Complete stage 7) in 2D processing Ensures Bnnn_FSP.DAT containing raw PCASP data is written to directory PMSDATA:	Y	
2) FLOODS> **RUN MRFB:[PMS.PCASP]PROCPCASP_NEW**	Y	
a) Flight number: **Bnnn** b) File name: **PMSDATA:Bnnn_FSP.DAT** c) Root output name: **PMSDATA:Bnnn_PROCPCASP** Produces PMSDATA:Bnnn_PROCPCASP.DAT (binary) PMSDATA:Bnnn_PROCPCASP.OUT (ascii) d) Minimum size channel: *default = 1* *If smallest size channel are known to be noisy the value of the highest noise free channel to be entered here* e) Calibration volume flow rate: *Use the most recent value. 1.8ccs^{-1}* *Calibration files to be stored in **Exeter*** *Entering zero gives default value = 1.0 cm^{3}s^{-1}* f) Time correction: *Same value as used in 2D processing stage 9d* g) Start time: *0 if unknown* h) End time: *240000 if unknown*		**Min size = 1** **Vol flow rate =** 1.15 085500 135500
3) FLOODS> **WAVE**	Y	Use PVWAVE for this section
i).WAVE> **write_procpcasp_to_m5, 'pmsdata:Bnnn_procpcasp.dat', 'pmsdata:Bnnn_m5procpcasp'** ii). WAVE> **exit**		
4) FLOODS> **MODIFY**	Y	
a) Modifying datasets: **pmsdata:Bnnn_m5procpcasp** b) Dataset: **mfddata:Bnnn_mfdX** c) New dataset: **mfddata:Bnnn_mfdY** d) Parameter description file: *leave blank to use default*		**X = B** **Y = X+1 = C**
5) CHECKS	Y	
Are PCASP and JW peaks synchronous? *In flight_plot, parameters* *Neph – total blue scatter.* *PCASP conc para 1550*		**Merged OK? Y**

FAAM Dropsonde Flight Log

Flight No.	B273	Date	01/03/2007
Page No.	1 of 2	Operator	SWH

GMT	Sonde No.	Event	Comments
		e.g. launch, splashdown	*e.g. windata? PTH data? Lat/Long*
092121	1	Launch	392.30 -39.80 36.82 233.70 14.80 -14.70 -25.067700 62.489500 7321.30 0
092919	1	Land	993.19 2.70 61.69 243.13 4.10 -11.23 -24.940028 62.511667 415.90 9
094806	2	Launch	392.47 -4.11 1.02 69.84 82.61 -1.23 -29.605672 61.816381 7874.17 5
095411	2	Land	994.04 3.14 63.49 127.38 3.50 -10.95 -29.592082 61.822931 480.99 10
101359	3	Launch	357.37 -8.06 0.79 68.46 160.08 0.02 -34.020505 60.994072 8528.19 8
102003	3	Land	992.18 2.77 85.78 62.05 3.97 -1.65 -34.040165 60.994165 458.59 9
101734	4	Launch	924.19 -2.50 98.16 70.20 6.54 -0.34 -34.577055 61.107845 1041.91 8
102353	4	Land	992.18 2.88 83.09 55.81 5.67 -6.27 -34.582235 61.105220 472.96 7
105224	5	Launch	359.50 -46.80 100.00 253.40 9.50 -14.70 -37.991400 63.004400 7931.10 0
110156	5	Land	995.02 -1.35 87.15 14.26 10.98 -10.12 -37.951937 62.994622 463.48 8
110630	6	Launch	359.40 -46.90 26.33 244.10 11.40 -14.70 -35.205900 63.468000 7933.30 0
111542	6	Land	993.72 0.22 70.18 39.02 6.29 -8.20 -35.155122 63.464716 469.84 9
112003	7	Launch	359.60 -46.40 108.03 245.10 13.90 -13.60 -32.393500 63.868000 7929.70 0
112922	7	Land	992.56 0.34 86.71 352.00 9.18 -10.97 -32.302574 63.859917 460.02 7
113403	8	Launch	352.00 -46.80 101.12 251.00 17.40 -14.60 -29.402100 64.222400 8076.90 0
114341	8	Land	990.86 2.01 75.64 252.75 3.87 -10.44 -29.285232 64.232783 466.73 9
115300	9	Launch	344.10 -47.40 82.54 267.20 28.80 -14.90 -26.997400 65.005000 8233.80 0
120238	9	Land	991.82 -1.28 97.03 110.45 16.48 -11.46 -26.893092 65.032513 515.94 8
120254	10	Launch	329.20 -49.80 50.99 267.30 38.10 -14.30 -27.715000 65.788400 8536.60 0
121219	10	Land	994.15 -1.58 87.57 99.18 11.16 -10.39 -27.594389 65.800894 569.03 7
121221	11	Launch	329.00 -51.20 48.65 270.30 42.80 -13.70 -28.432800 66.529800 8540.90 0
122203	11	Land	997.03 -11.17 90.70 29.93 10.51 -10.22 -28.288067 66.536776 624.57 7
122148	12	Launch	328.80 -52.10 85.75 265.90 33.60 -13.70 -29.196500 67.270600 8545.40 0
123127	12	Land	1001.93 -16.92 80.67 54.60 1.66 -6.89 -29.023362 67.273457 649.20 7
123115	13	Launch	329.00 -51.50 33.22 262.20 38.00 -14.30 -29.982600 68.007500 8540.50 0
124102	13	Land	1003.29 -18.61 54.64 53.78 10.05 -10.35 -29.775612 68.007476 704.28 9

125239	14	Launch	314.20 -48.50 12.32 257.50 27.40 -14.90 -24.996200 68.998600 8852.60 0
130244	14	Land	1007.33 -20.90 63.12 28.88 6.60 -9.82 -24.714530 68.990284 770.17 9
130051	15	Launch	314.40 -50.60 16.54 259.60 39.10 -14.00 -24.139400 68.293900 8849.00 0
131029	15	Land	1005.44 -19.63 64.73 54.89 10.75 -10.80 -23.875881 68.290312 733.64 9
130842	16	Launch	314.60 -53.90 83.45 256.90 40.40 -14.90 -23.421300 67.617100 8844.10 0
131845	16	Land	1001.60 -10.80 82.68 58.61 14.45 -10.55 -23.179861 67.614763 685.84 6
131654	17	Launch	314.70 -53.30 46.66 259.90 45.80 -14.80 -22.737900 66.930700 8842.90 0
132327	17	Land	1014.94 -21.50 34.05 274.72 10.62 -11.99 -22.515425 66.938929 781.64 7
132503	18	Launch	314.40 -51.90 58.99 263.80 46.40 -14.50 -22.093000 66.250400 8848.00 0
133458	18	Land	998.28 -6.14 61.62 70.40 8.59 -11.35 -21.886628 66.252933 606.40 7

Flight: B273

KEY

- Not Fitted
- Fitted, Not Operated
- Duff Data
- Minor Problems
- OK

Thermometers
- Cabin Temperature:
- Heimann:
- Deiced Temp:
- Non-deiced Temp:

Hygrometers
- FWVS:
- General Eastern:
- Johnson Williams:
- Nevzorov:
- Total Water Probe:

Cameras
- Downward Facing:
- Forward Facing:
- Rearward Facing:
- Upward Facing:

Navigation + Aircraft
- Cruciform GPS:
- GIN Applanix:
- INU Honeywell:
- Radar Altimeter:
- RVSM IAS:
- RVSM Static Pressure:
- XR5 GPS:

Report Created 15/03/2007 12:12:50

Misc Core
- AMTG:
- AVAPS:
- Cabin Pressure:
- Fax machine:
- Printer:
- S9 Static Pressure:
- Satcom C:
- Satcom H:
- Turb Centre-Static:
- Turb Left Right:
- Turb Up-Down:
- Turb Horizontal Chk:
- Turb Vertical Chk:
- Weather Radar:

DLUs:
- DLU AERACK:
- DLU BBR Lower:
- DLU BBR Upper:
- DLU Core Chem:
- DLU Core Consoles:
- DLU Port Aft:
- DLU Port Fwd:
- DLU Stbd Fwd:

Radiometers
Lower:
- BBR (clear) Lower:
- BBR (IR) Lower:
- BBR (red) Lower:

Upper:
- BBR (clear) Upper:
- BBR (IR) Upper:
- BBR (red) Upper:

- ARIES:
- DEIMOS:
- IR Camera:
- JNO2 Lower:
- JNO2 Upper:
- JO1D Lower:
- JO1D Upper:
- MARSS:
- SHIMS Lower:
- SHIMS Upper:
- SWS:
- TAFTS:

Last Updated: 14/03/2007 15:55:23

Cloud Probes
- 2DC:
- 2DP:
- FFSSP:
- PCASP:

- ADA:
- CCN:
- CDP:
- CIP 100:
- CIP 25:
- CPI:
- CVI:
- SID1:
- SID2:

Aerosol
- CPC 3025A:
- Filters 47mm:
- Filters 90mm:
- Neph - Dry:
- Neph - Wet:
- PSAP:
- AMS:
- CPC 3025 (AMS)
- INC:
- VACC:
- CPC 3010A (CVI):

Chemistry
- CO Aerolaser 5002:
- NOx TE42C:
- Ozone TE49C:
- Ozone TE49:
- SO2 TE43C:
- TDLAS (NIR) CH4:
- TDLAS (NIR) CO2:

- FAGE:
- Formaldehyde:
- NOxy:
- ORAC:
- PAN:
- PERCA:
- Peroxide:
- PTRMS:
- TDLAS (1C):
- WAS Bags:
- WAS Bottles:

Misc Non-Core
- CASI/ATM:
- LIDAR:
- LTI:
- SAW Hygrometer:

Faults / Incidents Log

Flight No. B273
Date: 01 March 2007

Instruments

1. Optical Disk – Problem writing to disk caused HORACE to run very slow. Rebooted HORACE pre-flight and turned disk over, then okay.

2. FFC Camera Window – appears to be smudges on window, may be on the inside.

3. Sonde #02 – Launch detect failed but started transmitting data from 800mb

4. Sonde #03 – As #02 but "launched" and transmitting at 900mb

5. Sonde #04 – As #02 but "launched" and transmitting at ~940mb. Unpacked parachute of #05 in aircraft, hung it from parachute and it "launched" fine. Repacked it then launched through tube, launch-detect straight away. Repacked all sondes from now, all launched okay.

6. Nevzorov – LWC signal erratic in flight. Control Unit doesn't respond to zero cal so switched off.

7. General Eastern – Started hunting around and above True Air Temp at 1137Z. Set it to Balance at 1100Z. No improvement. Switch off for a few minutes at 1126. Switch on again, still hunting. Eventually settled down

8. Sonde #17, pressure readings intermittent.

Aircraft

Nil

Satcom-H Calls

Nil

Post Flight - Turb Probe Water Traps

1. Indicate Amount of Water: **b) 1-2 drops**
2. Emptied by: Rodders
3. Dried by: Left open overnight

Pre-Flighter's Log

Date: B 73 ⟷ Flight No: 1/3/07 Pre-Flighter: AMJ

No.	√ or x	Location	Action	Comments
1	✓	Hangar	Collect Dustbin, put on a/c	
		Aircraft Cabin: Power-up		
2	✓	Core Chemistry	Gases x 3 ON	
3	✓	Cabin	All Racks Checked	
4	✓	Fwd CorCon	All reqd CBs made	
5	✓	Aft CorCon	CBs made, PCs ON	
6	✓	HORACE	Optical Disk loaded	
7	✓	HORACE	Recording data	
8	✓	HORACE	DLU Status Checked	
9	✓	HORACE	HORACE Status Checked	
10	✓	Satcom H	Power LED ON	
11	✓	Nevzorov	Checked and OFF	
12	✓	GPS	Checked	
13	✓	INU	Align	
14	✓	Cameras Pictures	Checked x 4 OK	
15	✓	Core Chemistry	Instruments Checked OK	
16	✓	Core Chemistry	CO Flows Checked OK	
17	✓	FWVS	Set up	
18	✓	Video x 2	Records okay, Rewind	
19	✓	Delced Rosemount	Heater Checked / Set	
20	✓	Heimann	Calibration Checked	
21	✓	TWC	ON & Checked	
22	✓	GE	Balance checked	
23	✓	INU	Navigate then back to Align	
24	✓	Hubs x 4	Checked ON	
25	✓	Fwd Console	Miss. Sci Laptop CB made	& CB on Port Fwd SSP
26	✓	CNC	Butanol filled	
27	✓	Dry Neph	Power up & Zero Cal	
28	✓	CGPS	Set up	
29	✓	Miss. Sci Laptop	Checked Onboard	
		Proceed to External Checks		

External Checks overleaf →

Pre-Flighter's Log

No.	√ or x	Location	Action	Comments
		External Checks		
29	✓	Turb Probe	Clean if reqd, Photo taken	
30	✓	JW	Cleaned & Checked	
31	✓	DI Rosemount	Cleaned & Checked	
32	✓	NDI Rosemount	Cleaned & Checked	
33	✓	Nevzorov	Cleaned/windings checked	
34	✓	GE	Cleaned & Checked	
35	✓	Lower BBRs	Domes cleaned/checked	
36	✓	Camera Windows	Cleaned	
37	✓	Heimann	Lens checked OK	
38	✓	TWC Cover	Fitted if required	
39	✓	All other covers	Removed	
40	—	Dustbin	Returned to hangar	
41		Tools	Check ALL in Toolkit	
42		Tools	Avalon informed	
		Avalon Checks		Signed
43	—	Upper BBRs Checked & Cleaned		
44		ICEX applied		
45	✓	Turb Probe - Traps emptied, detail contents -		a)Nil b)1-2 drops c)1/4 full or more
46	✓	Turb Probe - Traps dried and resealed		

LD LEFT OPEN IN HANGAR OL 2 DAYS

MISSING LOG SHEETS:

The following log sheets are not available for flight B273:

Log	Reason
Core Chemistry	Pre flight only, unmanned operation on auto calibrate so no In Flight log

Document control

Revision	Date	Author	Comments
r0	20 Mar 2007	Doug Anderson	Initial version missing the above noted logs
r1			
r2			

VIDEO RECORDINGS:

3 x Forward Facing Cameras
3 x Down/Rearward Facing Cameras

Digital8 video recordings from this flight reside with :

Dr Ian A. Renfrew

Dr Ian A. Renfrew
Reader in Climate System Dynamics
School of Environmental Sciences
University of East Anglia
Norwich, NR4 7TJ, United Kingdom
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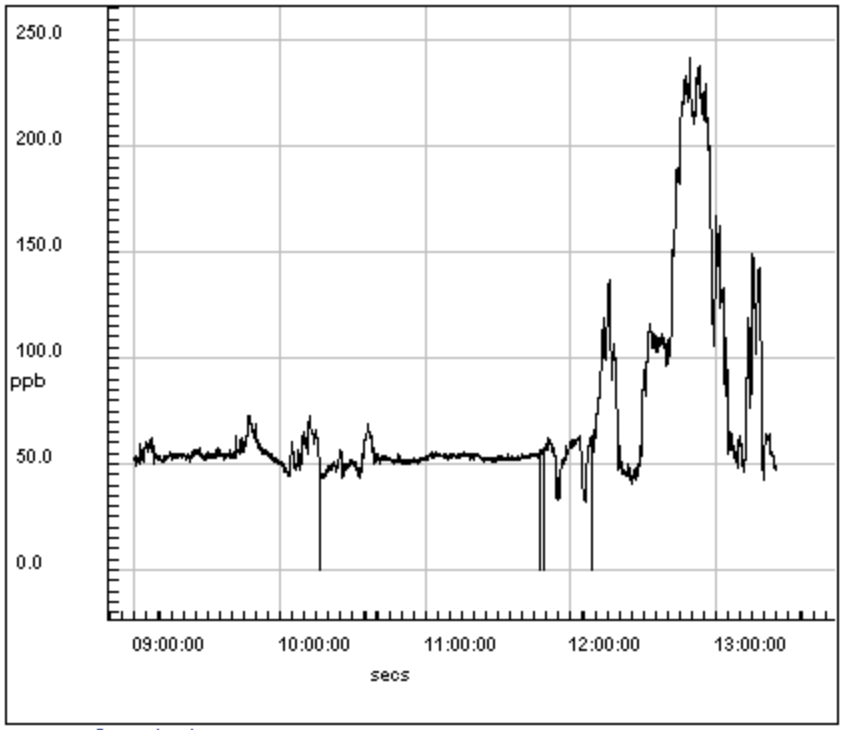
Fax: +44 (0) 1603 591327

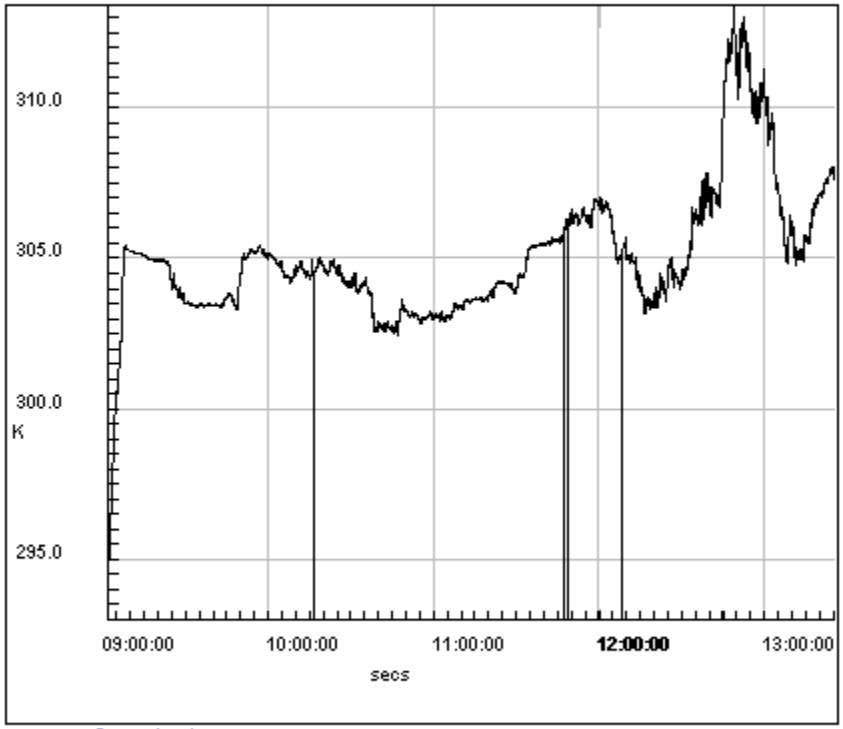
E-mail: i.renfrew@uea.ac.uk

Flight B273 13:24:58
Heading 173 deg Speed 321 knots Height 29.0kft Press 314mb
Lat 66°12.0'NLong 22°6.0'W Wind 46 ms-1/ 263 deg
Temp -51.85C Dewpoint -56.31C
From 09:00 to now

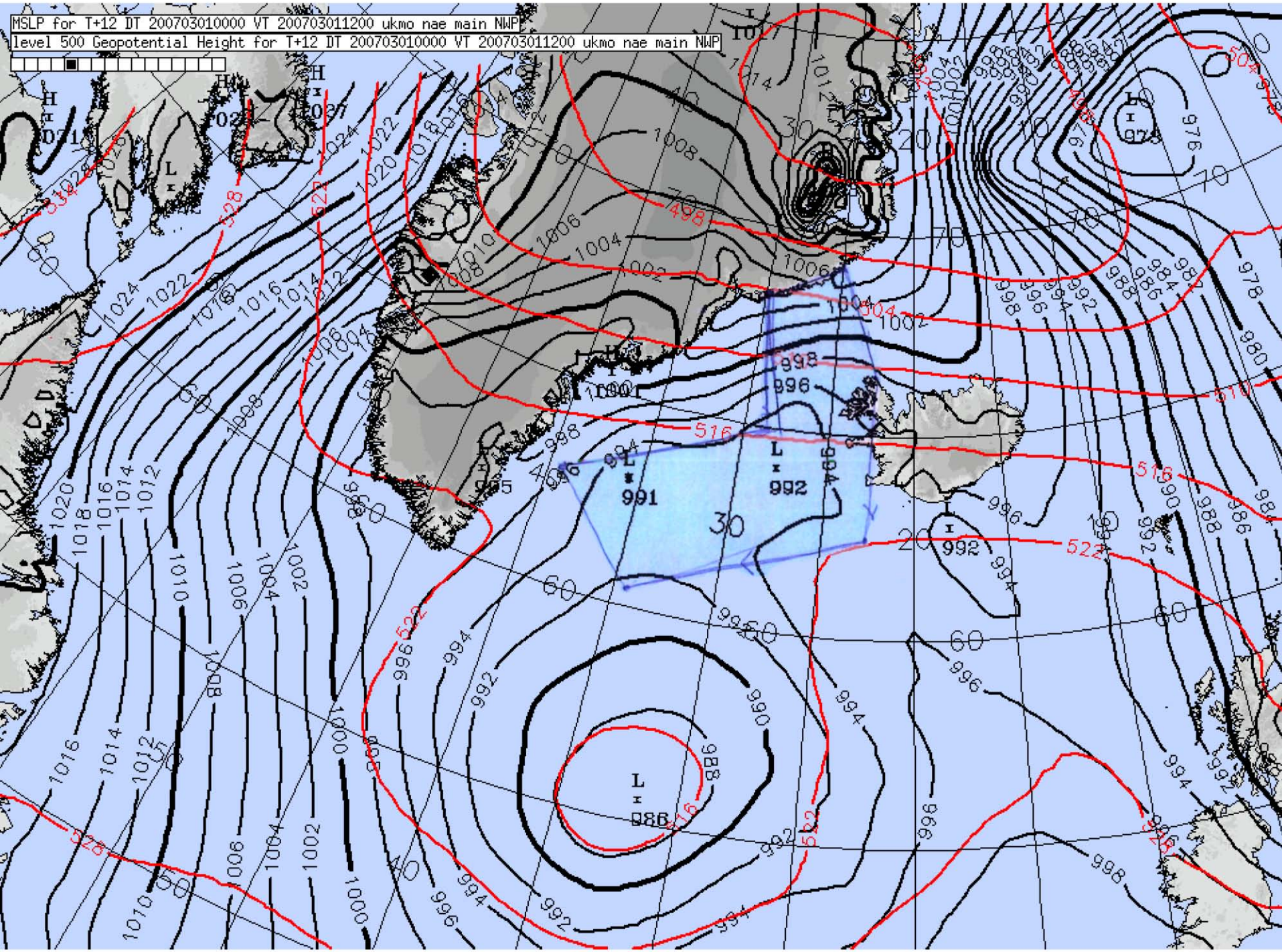


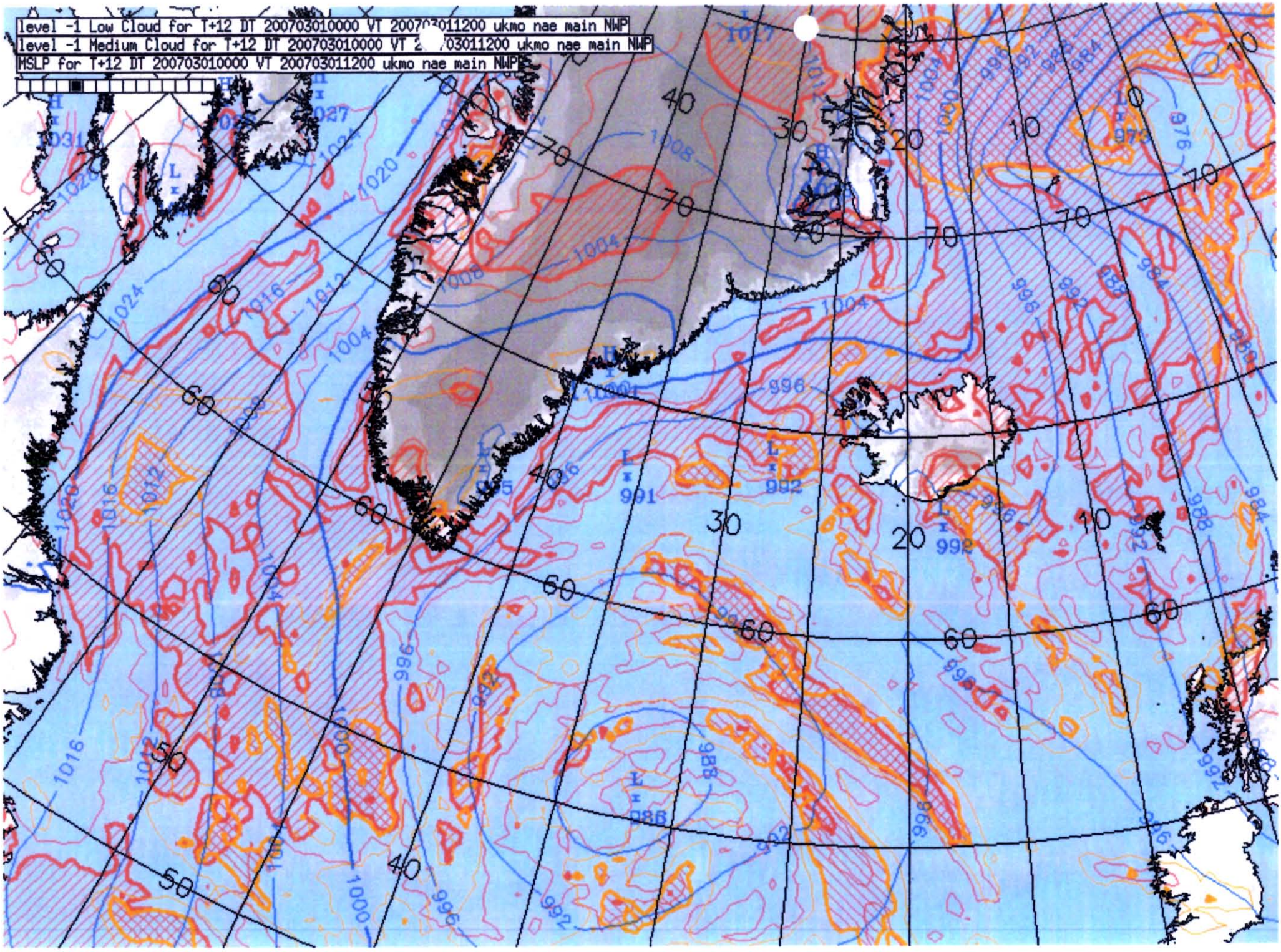
Current values
TIME FROM MIDNIGHT 48297 secs
OZONE MIXING RATIO 48.67 ppb
All scroll time

Flight B273 13:26:27
Heading 211 deg Speed 326 knots Height 29.0kft Press 314mb
Lat 66°6.0'NLong 22°0.0'W Wind 48 ms-1/ 267 deg
Temp -52.11C Dewpoint -55.75C
From 09:00 to now



Current values
TIME FROM MIDNIGHT 48387 secs
POTENTIAL TEMPERATURE 307.56 K
scroll time


MSLP for T+12 DT 200703010000 VT 200703011200 ukmo nae main NWP
level 500 Geopotential Height for T+12 DT 200703010000 VT 200703011200 ukmo nae main NWP
L 991
L 992
L 986
L 992


level -1 Low Cloud for T+12 DT 200703010000 VT 200703011200 ukmo nae main NWP
level -1 Medium Cloud for T+12 DT 200703010000 VT 200703011200 ukmo nae main NWP
MSLP for T+12 DT 200703010000 VT 200703011200 ukmo nae main NWP